

CLAIMSWHAT IS CLAIMED:

- 5                   1.     A method comprising:  
detecting a magnetic resonance imaging (MRI) interference signal;  
enabling at least one preventive measure to protect an implantable  
medical device from interference by the magnetic resonance  
imaging (MRI) interference signal; and  
10                   switching from a first sensing mode more affected by the magnetic  
resonance imaging (MRI) interference signal to a second  
sensing mode less affected by the magnetic resonance imaging  
(MRI) interference signal.
- 15                   2.     The method of claim 1, wherein detecting the magnetic resonance  
imaging (MRI) interference signal comprises detecting a high magnetic field having a  
magnetic field strength above a predetermined threshold.
- 20                   3.     The method of claim 2, wherein detecting the magnetic resonance  
imaging (MRI) interference signal comprises detecting the high magnetic field using a  
Hall Effect sensor disposed in the implantable medical device.
- 25                   4.     The method of claim 1, wherein enabling the at least one preventive  
measure comprises opening a case switch for the implantable medical device.
5.     The method of claim 4, wherein enabling the at least one preventive  
measure comprises opening the case switch for the implantable medical device and  
electrically isolating one or more leads from a can for the implantable medical device.
- 30                   6.     The method of any of claims 1-5, wherein switching from the first  
sensing mode to the second sensing mode comprises using at least one of a can-based  
accelerometer, a pressure sensor on a lead, an accelerometer on a lead, an

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accelerometer on a connector block, a flow sensor, a heart motion sensor based on time-of-flight, a temperature sensor, an impedance-based sensor and an oxygen sensor in the second sensing mode.

7. A device comprising:

a detector capable of detecting a magnetic resonance imaging (MRI) interference signal;

an actuator capable of enabling at least one preventive measure to protect an implantable medical device from interference by the magnetic resonance imaging (MRI) interference signal; and

a switch capable of switching from a first sensing mode more affected by the magnetic resonance imaging (MRI) interference signal to a second sensing mode less affected by the magnetic resonance imaging (MRI) interference signal.

8. The device of claim 7, wherein the detector is capable of detecting the magnetic resonance imaging (MRI) interference signal by detecting a high magnetic field having a magnetic field strength above a predetermined threshold.

9. The device of claim 8, wherein the predetermined threshold is about 0.17 Tesla.

10. The device of claim 8, wherein the detector is capable of detecting the magnetic resonance imaging (MRI) interference signal by detecting the high magnetic field using a Hall Effect sensor disposed in the implantable medical device.

11. The device of claim 10, wherein the actuator is capable of opening a case switch for the implantable medical device.

12. The device of claim 11, wherein the actuator is capable of electrically separating one or more leads for the implantable medical device from a portion of a housing for the implantable medical device.

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13. The device of any of claims 7-12, wherein at least one of a can-based accelerometer, a pressure sensor on a lead, an accelerometer on a lead, an accelerometer on a connector block, a flow sensor, a heart motion sensor based on time-of-flight, a temperature sensor, an impedance-based sensor and an oxygen sensor is used in the second sensing mode.

14. A device comprising:
- means for detecting a magnetic resonance imaging (MRI) interference signal;
  - means for enabling at least one preventive measure to protect an implantable medical device from interference by the magnetic resonance imaging (MRI) interference signal; and
  - means for switching from a first sensing mode more affected by the magnetic resonance imaging (MRI) interference signal to a second sensing mode less affected by the magnetic resonance imaging (MRI) interference signal.

15. The device of claim 14, wherein the means for detecting the magnetic resonance imaging (MRI) interference signal comprises means for detecting the magnetic resonance imaging (MRI) interference signal by detecting a high magnetic field having a magnetic field strength above a predetermined threshold.

16. The device of claim 15, wherein the means for detecting the magnetic resonance imaging (MRI) interference signal comprises means for detecting the high magnetic field using a Hall Effect sensor disposed in the implantable medical device.

17. The device of claim 14, wherein the device is an implantable medical device, and wherein the means for enabling the at least one preventive measure comprises means for opening a case switch for the implantable medical device.

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18. The device of claim 17, wherein the implantable medical device includes at least one lead and a can, and wherein the means for enabling the at least one preventive measure comprises means for opening the case switch for the implantable medical device and means for electrically separating the at least one lead from the can.

19. The device of any of claims 14-18, wherein switching from the first sensing mode more affected by the magnetic resonance imaging (MRI) interference signal to the second sensing mode less affected by the magnetic resonance imaging (MRI) interference signal comprises using at least one of a can-based accelerometer, a pressure sensor on a lead, an accelerometer on a lead, an accelerometer on a connector block, a flow sensor, a heart motion sensor based on time-of-flight, a temperature sensor, an impedance-based sensor and an oxygen sensor in the second sensing mode.